CLAIMS

Sub a1

1- Organic sol, characterized in that it comprises:

- titanium oxide particles;
- an organic liquid phase;
- at least one amphiphilic compound chosen from the polyoxyethylenated alkyl ether phosphates.

2- Sol according to claim 1, characterized in that the titanium oxide particles are at least partially covered by a layer of at least one silicon or metallic oxide, hydroxide or oxyhydroxide.

3- Sol according to claim 1, characterized in that the titanium oxide particles are at least partially covered:

- by a first layer of at least one cerium and/or iron compound, and
- by a second layer of at least one silicon or metallic oxide, hydroxide or oxyhydroxide.

4- Sol according to claim 2 or 3, characterized in that the titanium oxide particles have a BET specific surface area of at least 70 m^2/g.

5- Sol according to one of claims 2 to 4, characterized in that the ratio by weight of the silicon or metallic oxide(s), hydroxide(s) or oxyhydroxide(s) to titanium dioxide is at most 60% by weight.

6- Sol according to one of claims 3 to 5, characterized in that the first aforementioned layer is based on at least one cerium compound with a content such that the ratio by weight of the cerium compound, expressed in CeO2, to the titanium dioxide is at most 6% by weight.

7- Sol according to one of claims 2 to 6, characterized in that the aforementioned layer or the aforementioned second layer is based on silica and/or aluminium oxide, hydroxide or oxyhydroxide.

8- Sol according to one of the previous claims, characterized in that the organic liquid phase is based on a polar solvent.

9- Sol according to one of the previous claims, characterized in that the amphiphilic compound is chosen from polyoxyethylenated alkyl or alkylaryl ether phosphates.

10- Sol according to one of the previous claims, characterized in that the polar solvent is chosen from halogenated solvents, esters, alcohols.

11- Solid compound, characterized in that it comprises a mixture of titanium oxide particles and at least one amphiphilic compound chosen from polyoxyethylenated alkyl ether phosphates.

12- Sold compound according to claim 11, characterized in that the titanium oxide particles are at least partially covered with a layer of at least one silicon or metallic oxide, hydroxide or oxyhydroxide.

13- Solid compound according to claim 11, characterized in that the titanium oxide particles are at least partially covered:

- by a first layer of at least one cerium and/or iron compound, and
- by a second layer of at least one silicon or metallic oxide, hydroxide or oxyhydroxide.

14- Process for the preparation of a sol according to one of claims 1 to 10, characterized in that the aforementioned amphiphilic compound and the organic liquid phase are mixed together, then the titanium oxide particles, optionally covered with one or both of the aforementioned layers, are dispersed in the mixture obtained.

15- Process for the preparation of a sol according to one of claims 1 to 10, characterized in that a mixture is formed of titanium oxide particles, optionally covered by one or both of the aforementioned layers, and at least one aforementioned amphiphilic compound, then said mixture is dispersed in the liquid phase.

16- Process for the preparation of a sol according to one of claims 1 to 10 comprising an organic liquid phase (a), in particular a sol in an organic phase (a) based on a polar solvent, characterized in that a dispersion is formed comprising titanium oxide particles, optionally covered by one or both of the aforementioned layers, and at least one aforementioned amphiphilic compound in an organic liquid phase (b) based on a solvent

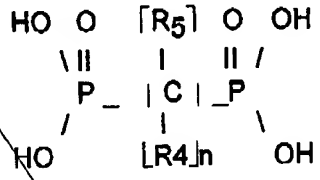
with a lower polarity than that of the solvent of the organic liquid phase (a); the solid phase is separated from the liquid phase (b); the solid phase obtained in this way is dispersed in the organic phase (a).

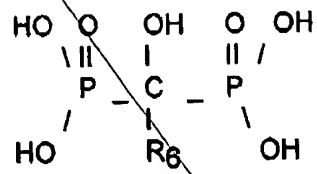
17- Preparation process according to one of claims 14 to 16, characterized in that, as starting product, titanium dioxide particles are used which were obtained by hydrolysis of at least one titanium compound A in the presence of at least one compound B chosen from:

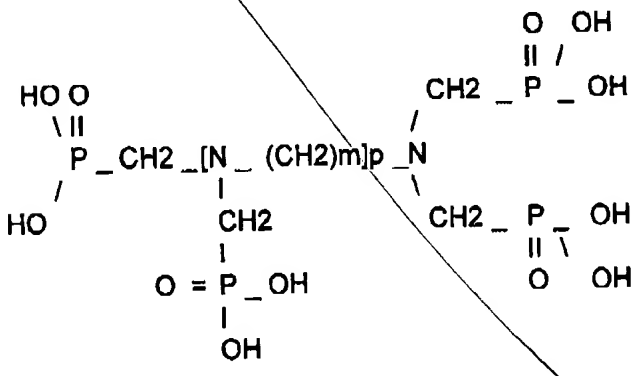
(i) acids which have:

- either a carboxyl group and at least two hydroxyl and/or amine groups,
- or at least two carboxyl groups and at least one hydroxyl and/or amine group,

(ii) organic phosphoric acids of the following formulae:







in which n and m are integers comprised between 1 and 6, p is an integer comprised between 0 and 5, R_4, R_5 and R_6 identical or different represent a hydroxyl, amino, aralkyl, aryl, alkyl group or hydrogen group,

(iii) the compounds capable of releasing sulphate ions in an acid medium,

(iv) salts of the acids described above

and in the presence of anatase titanium dioxide seeds;

then separation of the precipitate formed from the hydrolysis medium.

18- Process according to claim 17, characterized in that, as starting product, titanium dioxide particles are used which were obtained by the aforementioned hydrolysis process and in which the anatase titanium dioxide seeds are of a size no greater than 8 nm and are present in a ratio by weight expressed in TiO2 present in the seeds/titanium present before the introduction of the seeds into the hydrolysis medium, expressed in TiO2 comprised between 0.01% and 3%.

19- Process according to claim 17 or 18, characterized in that, as starting product, titanium dioxide particles are used which were obtained by the aforementioned hydrolysis process and in which the titanium compound A is titanium oxychloride.

20- Process according to one of claims 17 to 19, characterized in that, as starting product, titanium dioxide particles are used which were obtained by the aforementioned hydrolysis process and in which compound B is citric acid.

21- Process according to one of claims 17 to 20, characterized in that, as starting product, titanium dioxide particles are used which were obtained by a process comprising the aforementioned hydrolysis and in which the precipitate formed is separated from the hydrolysis medium then redispersed in water resulting in a dispersion of titanium oxide in water and where said dispersion is dried at a temperature no greater than 120°C.

22- Process according to one of claims 14 to 21, characterized in that the sol is subjected to an ultrafiltration treatment.

23- Use of a sol according to one of claims 1 to 10 for the preparation of formulations for cosmetics, varnishes, paints and in plastics.